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INDIANS AND SELECTIVE SERVICE

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The role of Indians in national defense is outstanding. During the last World War, Indians were not subject to military service, although they registered under the draft law to the extent of 17,513. In 1918 the Commissioner of Indian Affairs reported that more than 6,000 had enlisted in the military services. Similar response in the present emergency is exemplified by Indians of the Fort Peck, Montana, Agency, where almost 50 percent of the number eligible for selective service have already volunteered in the armed forces of the Nation. In Oklahoma, 30 Comanches were selected from many applicants to form a special detachment of the Signal Corps to use the Indian language for code purposes in communication. The Comanche language was chosen because it is little known and difficult to learn.

Material is not available to show the physical condition of Indians during the last World War.

Under the present Selective Service Act, practically 100 percent registration of Indians has been effected without difficulty. The following table shows eligible Indians:

TABLE 1.—*Estimated Indian male population under the jurisdiction of the Office of Indian Affairs and estimated number 21 to 35 years of age, Jan. 1, 1940, by State, including Alaska*[1]

State	Estimated Indian male population	Number 21 to 35 years of age	State	Estimated Indian male population	Number 21 to 35 years of age
Total	199,518	41,899	Nevada	2,700	567
			New Mexico	19,308	4,055
Arizona	26,042	5,469	New York	3,516	738
California	11,780	2,474	North Carolina	1,818	382
Colorado	451	97	North Dakota	5,921	1,243
Florida	281	59	Oklahoma	51,600	10,836
Idaho	2,112	444	Oregon	2,607	547
Iowa	238	50	South Dakota	14,638	3,074
Kansas	1,087	228	Texas	166	35
Louisiana	58	12	Utah	1,140	239
Michigan	2,390	502	Washington	6,994	1,468
Minnesota	8,267	1,736	Wisconsin	6,401	1,344
Mississippi	1,006	211	Wyoming	1,207	253
Montana	8,586	1,803	Alaska	16,830	3,534
Nebraska	2,374	499			

[1] The male population is estimated as 50.6 percent of the total (394,280) and the age group 21 to 35, inclusive, as 21.0 percent of the male population (199,518).

A study has been made of reports submitted by a number of unselected Agencies giving data on registrants examined and rejected. A considerably larger number was reported, but, because of various factors, some elimination was necessary. These factors included incomplete reports, failure to give causes for rejection by individuals, and similar reasons. In some instances local boards declined to divulge the information. It is believed that a significant number is shown in table 2. Figures given are for examined men classified as not qualified for general military service (Class IV–F and Class IB) by local boards only. Army induction center rejection figures are not immediately available, although such rejections probably would eliminate an additional 10 percent of the selectees.

TABLE 2.—*Indians rejected on examination by local boards as not qualified for military service, by Agency, tribe, and cause*

Agency	Tribe	Examined	Rejected	Eye diseases	Tuberculosis	Venereal diseases	Nervous and mental diseases	Foot diseases	Defective teeth	Weight	Ear, nose, and throat	Cardiovascular	Genito-urinary	Varicose veins	Other
Total		1,575	591	124	79	70	67	39	33	31	30	25	9	5	79
Percent		100	37.51	7.86	5.01	4.44	4.25	2.47	2.10	1.96	1.90	1.58	0.57	0.32	5.01
Cherokee (N. C.)	Cherokee	20	8			4	1	1		1				1	
Consolidated Chippewa (Minn.)	Chippewa	40	20	4		2	4		6		1				3
Keshena (Wis.)	Menominee	66	44	5	5	1	8	3	5			8			9
Sisseton (S. Dak.)	Sioux	58	21	7		2	8		1			1	1		1
Crow Creek (S. Dak.)	do	13	8	1	3	1	2	1							
Rosebud (S. Dak.)	do	114	81	21	9	17	7	9	3	1		1	2	1	10
Cheyenne River (S. Dak.)	do	41	20	4	6	1	2	2		1		3	1		
Standing Rock (N. Dak.)	do	56	25	8	2		7		1			1	4		2
Fort Totten (N. Dak.)	do	28	17	3	2	4	1		2	1					4
Winnebago (Nebr.)	Omaha	22	5	1			3								1
Crow (Mont.)	Crow	35	12	3			1		1	1	1	1			4
Fort Belknap (Mont.)	Goshute	12	2	1											1
Rocky Boy (Mont.)	Chip-Cree	25	5	3							1				1
Warm Springs (Oreg.)	Mixed	17	6		3	1			1		1				
Pawnee (Okla.)	Miscellaneous	48	17		4	5	2	1	1	2	1	1			1
Osage (Okla.)	do	73	30	2		8	7	1	3	4		1			4
Five Civilized Tribes (Okla.)	do	108	52	4	3	7	9	10	2	4	3	2			8
Navajo (Ariz.)	Navajo	520	157	47	33	15	1	7	4	11	17	4	1	1	16
Sells (Ariz.)	Papago	32	13	2	2		2			2	1			1	2
San Carlos (Ariz.)	Apache	35	5								2				3
Fort Apache (Ariz.)	do	73	27	8	7			2	1	1	2	1			5
Mescalero (N. Mex.)	do	8													
Mission (Calif.)	Miscellaneous	131	16			2	2	2	2	2		1		1	4

Estimate of rejected examinees generally under the Selective Service Law, as given by Britten and Perrott (*1*), was based on an analysis of examinations of 21,025 men classified as unfit for military service because of physical disability. For comparative purposes their listing of defects is modified to show conditions reported in the 591 Indians. Not all conditions found by them were reported as such among Indians and those conditions have, therefore, been grouped in the "all other" column. It must be emphasized that all figures given are for primary cause of rejection and should not be interpreted as prevalence of disease among the selectees.

TABLE 3.—*Comparative data on percent of causes for rejection by local boards for military duty among Indians and among all examined men*

	Indians	United States		Indians	United States
Total	37.51	32.00	6. Defective teeth	2.10	6.26
			7. Weight	1.96	1.05
1. Eye diseases	7.86	3.62	8. Ear-nose-throat	1.90	1.37
2. Tuberculosis	5.01	(1)	9. Cardio-vascular	1.58	3.03
3. Venereal diseases	4.44	1.13	10. Genito-urinary	0.57	0.62
4. Nervous and mental diseases	4.25	1.83	11. Varicose veins	0.32	0.35
5. Foot diseases	2.47	1.03	12. All other	5.01	11.68

[1] Listed in "all other."

The number of men in each age group who were examined is not available, so that full conclusions cannot be drawn, but as a matter of interest the distribution of rejections by cause of the 549 whose ages were reported is as follows:

TABLE 4

Age	Eyes	Tuberculosis	Venereal diseases	Nervous and mental diseases	Foot diseases	Defective teeth	Weight	Ear-nose-throat	Cardio-vascular	Genito-urinary	Varicose veins	Other	Total
21	13	7	6	4	4	2	1	3	2	2	0	12	56
22	11	7	5	6	5	1	5	3	2	2	0	7	54
23	13	11	7	4	2	1	0	4	2	0	0	9	53
24	10	5	5	6	6	2	2	4	3	1	1	7	52
25	18	7	5	5	3	1	4	1	3	0	0	8	55
26	10	8	7	3	2	5	2	1	0	0	0	8	46
27	9	6	8	5	6	3	0	1	1	1	0	6	46
28	5	1	4	5	1	2	1	2	0	0	2	5	28
29	6	3	1	2	1	3	6	1	0	0	0	2	25
30	2	6	5	1	2	2	1	1	1	1	0	3	25
31	3	5	1	2	2	4	1	1	2	0	0	5	26
32	5	0	2	4	1	2	1	1	2	0	0	4	22
33	5	0	0	1	0	5	2	2	2	1	0	2	20
34	3	2	3	2	0	2	0	1	0	0	0	1	14
35	5	2	4	2	1	3	2	1	1	2	0	4	27

Tuberculosis.—Tuberculosis was not specifically given in Britten and Perrott's analysis, whereas it looms large in the figures for Indians, although it probably would not exceed that to be found in similar economic groups among the general population. Also, it is

probable that a considerably larger proportion of Indians had X-ray examination of the chest because of availability of facilities and a continuous educational campaign.

Venereal disease.—Occurrence of venereal disease (syphilis and gonorrhea) appears higher than for the general sample. The impression has prevailed that Indians had less venereal disease than the general population, although complete surveys have not been reported. Familiarity of Indian Service examining physicians with governmental records and general procedures and facilities for complete examination may account to some extent for reporting of more venereal disease as primary cause of rejection. It is expected that further studies will clarify many phases of the question of prevalence as well as major rejection causes.

Eye diseases.—Of the 124 men rejected because of eye defects, 58, or 46.7 percent, were reported as having trachoma. This reveals an incidence of trachoma among all examined Indians of 3.6 percent, which is somewhat lower than the estimate of the disease among the general Indian population. Examinations during the past year by special physicians of 70,710 Indians showed 9,260 cases (13 percent). However, they were selected cases and the occurrence therefore was much higher than among the Indian population in general. Elimination of trachomatous individuals from this study of premilitary examinations leaves the number rejected for other eye conditions approximately the same as reported by Britten and Perrott.

Nervous and mental diseases.—Rejections because of nervous and mental diseases show a surprisingly high total, as it has always been the impression of Indian Service officials that mental disease is not so common among Indians. The Service maintains no beds for mental patients in its 97 hospitals. There are only a few more than 200 Indians in various State mental institutions and in St. Elizabeths Hospital, drawn from a population of approximately 300,000. Infrequency of cerebrospinal syphilis has long been known. One possible partial explanation of the high rate of mental disease among registrants is a more thorough examination by Service physicians, and a lack of knowledge and understanding of the Indian personality by non-Service physicians.

Foot diseases.—No explanation can be made relative to the incidence of foot diseases, which appears to be twice that of the general group. It has been suggested that a study of similar low economic groups might show an equally high occurrence.

Defective teeth.—The relatively low incidence of defective teeth as a major cause for rejection among Indians presents an interesting situation. The group examined were not too long out of boarding and day schools, to which dental service is almost entirely limited, so that at least fair condition of the teeth might be expected. Pos-

sibly of more importance is the fact that practically all Indians reside west of the Mississippi in areas where water contains fluorine to a higher degree, which has been found to be concomitant with lessened dental caries. Further analysis of general Selective Service figures by States and smaller areas should clarify this possibility.

Attention is again directed to the fact that the above figures are for major causes of rejection and not an indication of prevalence of disease.

Although the numbers of Indians examined and rejected, as shown in this study, are comparatively small, the figures are statistically significant. They well demonstrate the necessity of giving serious consideration to rehabilitation and general physical welfare.

Efforts of the Indian Service Health Division have not, for obvious reasons, been principally directed to the Indian population affected by Selective Service. Health facilities are concerned with complete physical care, including domiciliary, public health, sanitation, and hospitalization of approximately 300,000 individuals. These facilities include the services of approximately 200 full-time and 175 part-time physicians, 800 hospital and public health nurses, and 1,300 other employees, 97 hospitals with about 5,000 beds, and numerous clinics and dispensaries scattered over 25 States and Alaska from Florida to the Arctic Circle.

Because of health education, and through necessity imposed by low economic status, Indians are availing themselves of services to an extent which almost overwhelms the organization. Sixty-four thousand patients were treated in hospitals and over a million out-patient treatments given in 1941. More than 80 percent of Indian babies were delivered by Service physicians. Special physicians are assigned to continuous mass surveys and case-finding in tuberculosis. Specialists also are making tremendous progress in treatment of trachoma since the introduction of sulfanilamide in the treatment of this disease by Loe of the Indian Service. In 70,000 examinations last year, 9,000 cases were found and about two-thirds were placed under treatment. The totally inadequate staff of 18 full-time dentists is unable to furnish more than partial dental care.

Venereal diseases among Indians vary with the proximity to white communities. These, with other defects, are treated as part of the local health program by Agency physicians. Routine general physical examinations, often including serology, and X-ray of the chest, are standard procedure in the Service, with most favorable corrective results in the more easily accessible groups, such as school children and Civilian Conservation Corps enrollees.

Expansion of health work and specific attention to rehabilitation of rejected selectees by the Indian Service is practically impossible with present personnel and funds. If additional funds are not provided it will be necessary for the various States to assume a larger portion of

the responsibility or the Indians must be included in any national program.

In many instances the Indian is not recognized as an integral part of the community by local, State, and Federal health and welfare organizations which are not directly aware of the immediate and complex nature of the problems besetting the existence of this racial minority. Until cognizance is taken of conditions actually existing which not only affect the Indians themselves but the surrounding communities as well, progress in the general public health field will continue to be retarded in those areas and States where Indians reside.

REFERENCE

(*1*) Britten, R. H., and Perrott, George St. J.: Causes of physical disqualification under the Selective Service law. Early indications. Pub. Health Rep., **56**:1017 (May 9, 1941).

THE CODING AND TABULATION OF MEDICAL AND RESEARCH DATA FOR STATISTICAL ANALYSIS [1]

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Most of the conventional punch-card methods are applicable to large-scale statistical investigations in which there are relatively few variables and in which there is little need or opportunity to return to the original records after statistical work has begun. In research, on the other hand, it may be necessary to study the interrelationships of a relatively large number of variables in a comparatively small number of cases. Further, it may be advantageous for the investigator to return to his original records frequently whenever statistical analysis opens up new points of view. Moreover, if the intercorrelation of several sets of variables is to be studied it will be necessary to run the cards through the sorting machine or the tabulator many more times than when simple descriptive tables (like census data) are to be set up. A system of coding that may be workable for assembling simple tables may become burdensome or impracticable in setting up correlation tables and frequency distribution.

If the number of cases to be tabulated is small, the time required to build up tables by punch-card methods may be as great as the time required to obtain the same results by hand methods. Sometimes the suggestion is made that if no more than 500 cases are to be studied and if only simple tables are to be set up, it is quite as satisfactory to use hand methods as machine methods. The number of cases is not as important, in this connection, as the number of items that are to be correlated with each other. If a set of data contained 10 or 12 variables, most of which could be correlated with almost

[1] From the Division of Industrial Hygiene, National Institute of Health.

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any one of the other variables, it would probably save time to transfer the data to punch cards even if there were less than a hundred cases.

If most of the data are nonquantitative, the use of perforated-margin punch cards should be considered.

When the number of case records is small, or when punch-card equipment is not available, it is a good plan to copy pertinent data by hand from the original records on sheets similar to the ones shown in figure 3. These sheets can be arranged, and labelled, so that each sheet or set of sheets contains information about individuals who are similar in certain specified respects. After these sheets have been set up, the data can be counted or averaged, and the counts or averages can be copied directly into tables. The first half of this paper describes the advantages of listing research data in this form and applies both to data listed by hand and to data listed by machine. If punch-card equipment is available it is possible for an investigator to save a good deal of time by using it. What is more important, it may enable him to try out many more statistical procedures and many more systems of classifying his data than he could undertake otherwise.

Installations of punch-card machinery are in use in many health departments and in many educational institutions. Where equipment is not available elsewhere it may be possible to make arrangements with the service bureaus maintained in many cities to do part or all of the operations described here.

The punch-card machinery required for the operations under discussion here are a card punch, sorting machine, and either a numerical or an alphabetic printing tabulator.

For the information of persons who may not be familiar with punch-card equipment, a card punch has 12 keys, numbered 0 to 9 and 11 and 12. The 11-key is usually referred to as "X" and the 12-key is variously called "V", "Y", or "B". Each key, when depressed, actuates mechanism which punches a hole in 1 of 12 positions in a numbered column of a special card. Each column is used for a specified kind of information.

A sorting machine draws cards, one at a time, from the bottom of a stack, reads the information in a single, designated column, and drops each card into 1 of 12 boxes according to the number punched in that column. Simultaneously, the number of cards dropped into each box is counted on numbered dials.

Tabulators will print all, or any selected part, of the information on a punch card on a sheet of paper. The portions of sheets shown in figure 3 were prepared in this way. Tabulating machines may also be made to carry out other operations: (*a*) Numerical information may be summed and the totals printed. (*b*) The tabulator may be made to count, for instance, only cards punched 2, 4, or 7 in a certain column, and to disregard all others. (*c*) The information coded in column 12, for instance, may be made to control the operations the tabulator will carry out on information punched in columns 39 and 40, for example. (*d*) A number punched in columns 69 and 70, for instance, may be multiplied by itself automatically by appropriate wiring of a printing tabulator and the square

added to the sum of squares of other numbers punched in the same two-column field. This forms the basis of an easy and rapid method of calculating standard deviations and other statistical measures. (*e*) Similarly, a number punched in columns 69 and 70 may be multiplied by a number punched in columns 11 and 12, for example, and the product added into counters set aside for the purpose. This greatly facilitates the calculation of correlation coefficients. The basic principle underlying these two operations is tersely explained in technical publications (*8,9*) whose wording may not suggest their usefulness unless special attention is called to them. (*f*) When the data describing one individual are so extensive that they cannot be gotten on a single card in simple code they may be continued on a second punch card. Data in columns 8 and 9 in the first card may be correlated with data punched in columns 25 and 26 of the second card. Certain elements of this operation have been described in a technical publication (*13*) which, however, fails to indicate how greatly this procedure increases the value of the punch card method and permits the use of simple codes instead of complicated codes. The last three methods have been extended, improved, and tested in actual use by Dr. E. C. Hammond, of the Division of Industrial Hygiene, who plans to publish a description of them shortly.

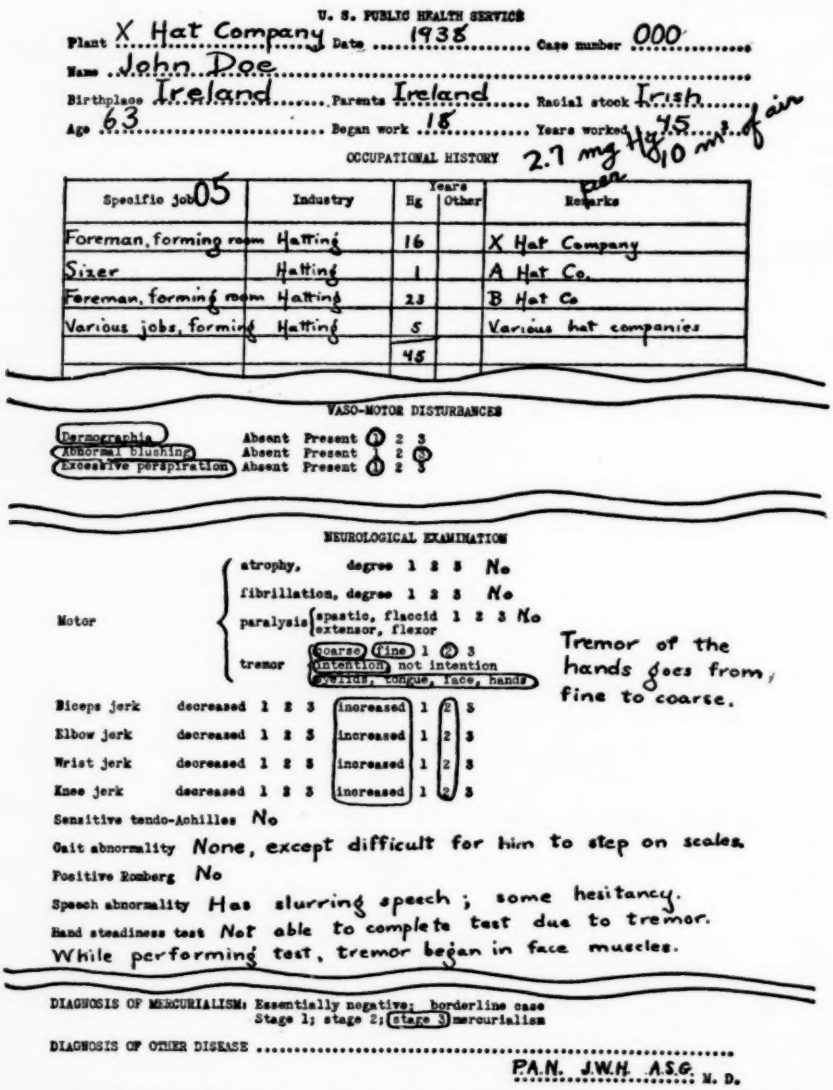
The methods described in this paper were developed during the course of analysis of medical data obtained during field studies carried out by the Division of Industrial Hygiene of the National Institute of Health. These include epidemiological studies of workers exposed to dust (*3, 4, 6*), mercury (*11, 12*), lead (*5*), lead arsenate (*10*), and fatigue (*7*). In each of these field studies the clinical and laboratory findings of 500 to 2,500 workers were correlated with each other and with measurements of the intensity and duration of exposure to the condition under study.

EXAMPLE OF CODING AND TABULATING METHODS

The simplest way to describe the coding and tabulating methods under discussion here is to present a series of exhibits through which the records of a single individual can be traced. The data of figures 1 and 2 and of table 1 have been drawn from a recent study of mercurialism in the felt-hat industry (*11*). Figure 1 consists of excerpts from a record form filled out by an examining physician in a field office. The estimate of average atmospheric mercury exposure, in this instance 2.7 milligrams of mercury per 10 cubic meters of air, and a code number designating the man's occupation (05 in the example) were filled in by the engineer who studied working conditions. These numbers were written in above the occupational history. Before planning the punch-card procedure several simple systems of tabulations were carried out by hand on a sample of the records to select the clinical and laboratory findings that could be usefully tabulated in more than one type of table. Copies of a combined code sheet and transcription sheet for the card punch operator bearing these items were prepared and the records of each man were transferred to a

separate sheet, shown in figure 2. Entries on the history form may be traced on the transcription sheet.

It is desirable from every point of view, in the statistical treatment of research data, for the person who is to interpret the data to do the



U. S. PUBLIC HEALTH SERVICE

Plant X Hat Company Date 1938 Case number 000

Name John Doe

Birthplace Ireland Parents Ireland Racial stock Irish

Age 63 Began work 18 Years worked Hg 45 2.7 mg Hg/10 m³ of air

OCCUPATIONAL HISTORY

Specific job 05	Industry	Years Hg	Years Other	Remarks
Foreman, forming room	Hatting	16		X Hat Company
Sizer	Hatting	1		A Hat Co.
Foreman, forming room	Hatting	23		B Hat Co
Various jobs, forming	Hatting	5		Various hat companies
		45		

VASO-MOTOR DISTURBANCES

Dermographia	Absent	Present	1 2 3
Abnormal blushing	Absent	Present	1 2 3
Excessive perspiration	Absent	Present	1 2 3

NEUROLOGICAL EXAMINATION

Motor
- atrophy, degree 1 2 3 No
- fibrillation, degree 1 2 3 No
- paralysis (spastic, flaccid; extensor, flexor) 1 2 3 No
- tremor (coarse, fine) 1 2 3; (intention, not intention); (eyelids, tongue, face, hands)

Tremor of the hands goes from fine to coarse.

Biceps jerk	decreased	1	2	3	increased	1	2	3
Elbow jerk	decreased	1	2	3	increased	1	2	3
Wrist jerk	decreased	1	2	3	increased	1	2	3
Knee jerk	decreased	1	2	3	increased	1	2	3

Sensitive tendo-Achilles No

Gait abnormality None, except difficult for him to step on scales.

Positive Romberg No

Speech abnormality Has slurring speech; some hesitancy.

Hand steadiness test Not able to complete test due to tremor. While performing test, tremor began in face muscles.

DIAGNOSIS OF MERCURIALISM: Essentially negative; borderline case. Stage 1; stage 2; (stage 3) mercurialism

DIAGNOSIS OF OTHER DISEASE .....

P.A.N. J.W.H. A.S.G. M. D.

FIGURE 1.—Portions of the history of a case of mercurialism. Pertinent information has been transferred, in numerical code, to the transcription sheet shown in figure 2. This case also appears in the lower part of figure 3.

coding also. Experience has shown that transcription sheets of the kind shown in figure 2 so facilitate the coding process that one of the physicians who made the field medical examinations can code all of the medical data in a relatively short time. This procedure has been

followed in all of the recent field studies of this Division. A clerk can copy other data. In this form it is easy to verify the correctness of coding at any time.

It is best to arrange the transcription sheet so that the code numbers are lined up. In this way the card punch operator does not need to look from side to side for the numbers he punches in the card.

TRANSCRIPTION SHEET — HATTING STUDY

Col. CENSUS DATA

1 - 3 000 Case number

4 (0) male; 1= female (encircle one)

5 - 6 63 Age, directly

7 - 8 05 Occupation (See supplementary occupational code)

9-10 45 Years employed

Mg. mercury per 10 cubic meters of air

11-12 2.7 at time of study

13-14 2.7 weighted average

Do not punch X in this field

DIAGNOSIS OF MERCURIALISM

15 0 non-affected (encircle one)
5 borderline case
1, 2, (3) stage mercurialism

PAST MEDICAL HISTORY

Code 0 if condition is absent, 1 if present, and X if unknown

16 0 1 Nervous disease
17 0 1 Shakes
18 0 1 Digestive disorder
19 0 1 Stomatitis

SPECIAL SYMPTOMS

20 0 1 Unsociability
21 0 1 Weakness
22 0 1 Drowsiness
23 0 1 Insomnia
24 0 1 Headache
25 0 1 Vertigo
26 0 1 Tremor
27 0 1 Paraesthesia
28 0 1 Metallic taste

GENERAL DESCRIPTION

0 = absent 1 = slight 2 = moderate 3 = severe

29 0 1 2 3 Pallor
30 0 1 2 3 Sclera injected
31 0 1 2 3 Gingivitis
32 0 1 2 3 Pharynx inflamed
33 0 1 2 good fair poor Oral hygiene

HEART

34-36 ..... Systolic blood pressure

37-39 ..... Diastolic blood pressure

40 0 1 2 3 Arteriosclerosis

41-42 ..... Heart disease
(The code for diseases of the heart is incorporated in the field manual.)

Col. TREMOR

43 0 = absent; Fine 1 (2) 3; Coarse 4 5 6

44 0 = absent; (1) = intention tremor; 2 = not intention tremor

45 Distribution of the tremor
0 = absent; 1 = hands only
2 = hands and 1 other member
3 = hands and 2 other members
(4) = hands and 3 other members
5 = generalized tremor

TENDON REFLEXES

		Normal	Decreased +	++	+++	Increased +	++	+++
46	Biceps	0	1	2	3	4	(5)	6
47	Elbow	0	1	2	3	4	(5)	6
48	Wrist	0	1	2	3	4	(5)	6
49	Knee	0	1	2	3	4	(5)	6

50 0 (1) Speech disturbances

51 0 1 2 (3) Score on hand steadiness test

VASO-MOTOR DISTURBANCES

		Absent	+	++	+++
52	Excessive perspiration	0	(1)	2	3
53	Abnormal blushing	0	1	2	(3)
54	Dermographia	0	(1)	2	3

LABORATORY FINDINGS

	Urine	Absent	Trace +	++	+++	++++	Unk
55	Albumin	0	5 1	2	3	4	X
56	Sugar	0	5 1	2	3	4	X
57	Casts	0	5 1	2	3	4	X
58	R B C	0	5 1	2	3	4	X
59	W B C	0	5 1	2	3	4	X
60	Kahn	0	1	2	3	4	X

61-62 ..... Hemoglobin (See supplementary code)

63-64 ..... Erythrocyte count; code 4,620,000 as 48

65-66 ..... Reticulocyte percent; code 0.6 as 06; 7.2 as 72, and any values over 9.9 as 99

67-68 ..... Lymphocytes, percent, as is

69-70 ..... Deviation of weight from expectation

71-72 ..... Deviation of systolic b.p. from "

73-74 ..... Deviation of diastolic b.p. from "

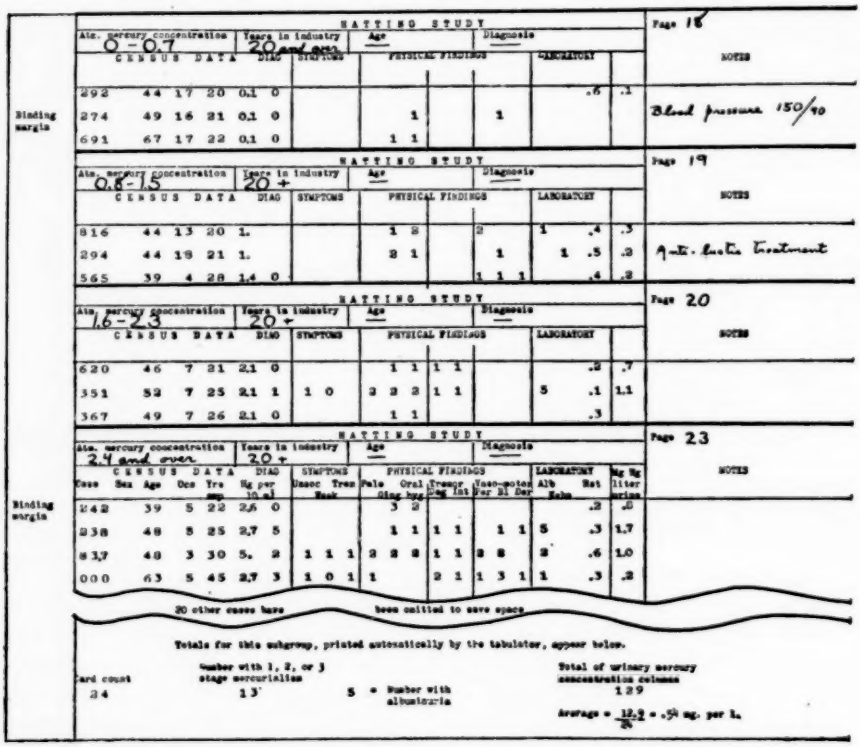
75-77 ..... mg. mercury per liter of urine

78-80 Blank--to be punched as needed for machine control

FIGURE 2.—The coded data pertaining to a single case are assembled on a transcription sheet before being transferred to a punch card.

Table 1 is one of a long series of tables in which diagnosis and the separate clinical and laboratory findings were tabulated in relation to duration and intensity of atmospheric mercury exposure. It represents a classification of the population of hatters into 12 sub-

groups, as nearly equal in number as the nature of the data permitted, on the basis of the average atmospheric mercury concentration pre-



HATTING STUDY — Page 18 — Atm. mercury concentration: 0 - 0.7 — Years in industry: 20 and over — Age — Diagnosis

	CENSUS DATA					DIAG	SYMPTOMS	PHYSICAL FINDINGS			LABORATORY		NOTES
Binding margin	292	44	17	20	0.1	0					.6	.1	
	274	49	16	21	0.1	0		1		1			Blood pressure 150/90
	691	67	17	22	0.1	0		1 1					

HATTING STUDY — Page 19 — Atm. mercury concentration: 0.8 - 1.5 — Years in industry: 20 + — Age — Diagnosis

	CENSUS DATA					DIAG	SYMPTOMS	PHYSICAL FINDINGS			LABORATORY			NOTES
	816	44	13	20	1.			1 2		2	1	.4	.3	
	294	44	19	21	1.			2 1		1	1	.5	.2	4-wk. Iodin treatment
	565	39	4	28	1.4	0				1 1 1		.4	.2	

HATTING STUDY — Page 20 — Atm. mercury concentration: 1.6 - 2.3 — Years in industry: 20 + — Age — Diagnosis

	CENSUS DATA					DIAG	SYMPTOMS	PHYSICAL FINDINGS					LABORATORY			NOTES
	620	46	7	21	2.1	0		1 1		1 1				.2	.7	
	351	52	7	25	2.1	1	1 0	2 2	2	1 1			5	.1	1.1	
	367	49	7	26	2.1	0		1 1						.3		

HATTING STUDY — Page 23 — Atm. mercury concentration: 2.4 and over — Years in industry: 20 + — Age — Diagnosis

	CENSUS DATA					DIAG	SYMPTOMS		PHYSICAL FINDINGS						LABORATORY		Mg Hg liter urine	NOTES
	Case	Sex	Age	Occ	Yrs exp	Hg per 10 cu	Unsteady	Tremor	Pale Ging hyp	Oral	Tremor Dig Int	Vaso-motor	Per Bl Der		Alb Kahn	Wat		
Binding margin	242	39	5	22	2.6	0			3 2							.2	.0	
	238	48	8	25	2.7	5			1 1	1 1		1 1		5		.3	1.7	
	837	48	3	30	5.	2	1 1	1	2 2	2	1 1	2	2	2		.6	1.0	
	000	63	5	45	2.7	3	1 0	1	1		2 1	1	3 1	1		.3	.2	

20 other cases have been omitted to save space

Totals for this subgroup, printed automatically by the tabulator, appear below.

Card count: 24

Number with 1, 2, or 3 stage mercurialism: 13

* Number with albuminuria: 5

Total of urinary mercury concentration columns: 129

Average = $\frac{12.9}{24}$ = .54 mg. per l.

FIGURE 3.—One listed sheet (listing continued on following pages if necessary) was prepared on a printing tabulator for each of the 12 subdivisions of table 1. Portions of four sheets are shown. Each sheet was labelled to show the subdivision of the data it represented. All entries represent fictitious cases.

vailing in their place of work and on the basis of the number of years they had been so exposed.

TABLE 1.—*Number and percent of first-, second-, and third-stage mercurialism cases among hatters, classified by duration and intensity of mercury exposure*

Milligrams of mercury per 10 cubic meters of air	Within each exposure group	Years of mercury exposure		
		0–9	10–19	20 and over
0–0.7	Number affected	0	0	0
	Number exposed	36	10	20
	Percent affected	0	0	0
0.8–1.5	Number affected	1	2	2
	Number exposed	76	31	20
	Percent affected	1.3	6.5	10.0
1.6–2.3	Number affected	3	14	18
	Number exposed	80	80	77
	Percent affected	3.8	17.5	23.4
2.4 and over	Number affected	2	4	13
	Number exposed	30	27	24
	Percent affected	6.7	14.8	54.2

SELECTIVE LISTING

To provide the materials for this series of tables, the punch cards were sorted into the requisite 12 subgroups and each subgroup was run through a printing tabulator wired to list the coded data as in figure 3. Figure 3 shows portions of 4 of the 12 sheets, or sets of sheets, required to assemble the data of table 1 and similar tables.

The printing tabulator can be wired so that data for several different kinds of tables can be assembled simultaneously. Several of its functions are illustrated by totals and by summary figures printed at the foot of the last tabulator sheet presented in figure 3.

The usefulness of listings of this kind is greatly increased if the cards are first put in order with respect to one of the variables being listed. Thus, in the data under discussion, the cards were first sorted so that the records of men employed 20 years came at the head of the list, followed by the records of men employed 21 years, and so on. Men with the longest periods of employment were listed at the end of the subgroup. This permits two additional operations. If one suspects that a finer classification by duration of exposure would display the data to better advantage, for instance, segregating the men employed 20 to 29 years, inclusive, from the men employed 30 years or more, it is a simple matter to pick out and summarize the records that belong in the new subgroups. Second, if one wants to set up a frequency distribution for a variable, listed data permit one to experiment with fine or with coarse class intervals. When a sorting machine is used to obtain frequency distributions, division of the range of variation into class intervals is often a highly arbitrary matter. Unsatisfactory class intervals, particularly too coarse a grouping, may throw means and standard deviations into error.

It is convenient to list coded data on mimeographed sheets with properly spaced columnar headings. Sheets of listed data can be handled and filed conveniently if all the sheets for a particular pattern of table are stapled together along a binding margin at the left to form a book.

In the hatting study, four such books corresponding to as many patterns of table were made up. One is shown, in part, in figure 3. A second was set up on the same pattern except that the records were classified in terms of the atmospheric mercury concentration that prevailed at the time of the study instead of by a weighted average mercury concentration. A third book classified hatters by age and by diagnosis of mercurialism, and a fourth classified them by occupation and by duration of employment.

ADVANTAGES GAINED BY LISTING CODED DATA ON TABULATOR SHEETS

1. The most obvious advantage gained by building up tables from listed data is that the accuracy of coding and classification

may be verified at any time. To illustrate, if the data of table 1 had been assembled by means of a sorting machine, the information about the incidence of mercurialism among hatters exposed for more than 20 years to mercury concentrations in excess of 2.4 milligrams Hg per 10 cubic meters of air, for example, would be limited to the two items that could be read from the dials of the sorting machine, namely, that there were 13 mercurialism cases among the 24 men thus exposed. The listing procedure, on the other hand, would show *which* 24 men were thus classified. One could read the printed entries and find out whether or not they had been properly classified. By reading each sheet, in turn, one can locate the records of persons accidentally thrown into other subgroups. Further, the case number listing makes it easy, if desirable, to look up the original records of any or all of the individual subjects and verify the coding and make a more detailed study of certain subjects.

2. Each line of listed data may be read as an abbreviated case history. In certain respects, comparisons between cases can be made more readily when they are assembled in this form than in the original written record because the irrelevant findings have been winnowed out, and the records of individual subjects are systematically arranged on a single sheet. The system of coding represented in figures 1 and 2 is easy to memorize. Basically, it rests on three principles: (*a*) If a condition can be either present or absent, its presence is designated by "1," its absence by zero. (If desired, one can wire the printing tabulator so that zeros will not print at all.) (*b*) If a condition like pallor or albuminuria is present to a slight, moderate, or severe degree, these gradations may be coded as 1, 2, and 3. During field medical examinations, physicians have found it convenient to record their findings in this system of notation by encircling a 1, 2, or 3, as the case may be, on the medical record form opposite the name of each condition they investigate, in effect, coding their findings as they record them. Britten (*1*) has pointed out the importance of systematizing the original entries. (*c*) Insofar as possible, the most familiar quantitative findings, such as blood pressures and erythrocyte count, have been recorded in the units in which they were measured. This is not strictly necessary, however, and further discussion of this point appears later in this paper.

There may be instances in which one might prefer to have the occurrence of insomnia indicated by the abbreviation INS instead of the symbol "1" in a certain column. The alphabetic printing tabulator can be wired so that it will print 2- or 3-letter alphabetic abbreviations for data coded in the way that the past medical history and special symptoms are coded in figure 2. Hammond and Edwards (*9*) have prepared an account of this method for publication.

3. It is desirable to have all of the clinical and laboratory data that appertain to an individual available at the time the cards are punched. In practice, this is not always possible. Three alternative methods of meeting this situation may be noted. (*a*) One may leave enough blank columns at the right end of the card to accommodate the additional data, and punch them in when they become available. It is desirable to leave a few blank columns at the right for other reasons. (*b*) One may prepare a second punch card for each individual. This was necessary in the hatting study. Each punch card carried the data to be used as independent variables (referred to as census data) at the left of the card. Thus, every dependent variable on either card could be classified into a table like table 1 or into any other form in which cards were sorted on the basis of data entered in columns 1 to 15, inclusive. Items punched in one card can, of course, be correlated with items punched on a second card. (*c*) If neither of these courses is practicable, one may draw up skeleton tables for the data to be available later, and, with a printing tabulator, list the cases that would be thrown into each subgroup of the skeleton table. Preferably, the cases should be listed in serial order by case number. Opposite the case number, one may copy the new data that appertain to that case. This system was necessary in a study of the effects of lead arsenate on man (*10*) because additional sets of chemical analyses of blood and urine samples became available at different times. Of the 55 tables in that publication in which clinical or laboratory findings were presented, 20 were built up from one book of tabulator sheets.

4. The punch-card method is most directly adaptable to data that can be expressed in numerical form or to observations that can be classified without difficulty into distinct categories, each of which can be designated by a code number. Not all medical and scientific observations can be thus classified, without loss of significance. It is often desirable to retain qualifying words that appear on the written record or to retain explanations that would modify the interpretation placed on a punch-card entry. Tabulator sheets, on the plan of the ones in figure 3, make this possible. The printed punch-card entries can be supplemented by verbal entries of any kind that may be pertinent. When text is being written for publication, enough information will be at hand to permit an accurate appraisal of the meaning of the formal table.

5. On occasion, two or more persons, collaborators or consultants, may wish to work with the same data simultaneously, in widely separated places. If people who are to work independently draw up skeleton tables corresponding to the lines of study they intend to carry out, a central statistical laboratory or one of the service bureaus maintained by the firms that install punch-card equipment can pre-

433648°—42——3

pare tabulator sheets which will provide all the data each person needs.

6. There is a limit, of course, to the amount of verbal entries that can and should be written on sheets of listed data. In certain types of investigation it is desirable for the person who writes text for publication to return to the original written record frequently, instead of relying implicitly on the inferences he can draw from formal tables. Tabulator sheets, such as those of figure 3, can be used as an index to the file of original records. For instance, one may wish to look up the record of a case of mercurialism that occurred in an unusually low exposure group. Or, in describing the symptomatology of mercurialism, one may need to consult all the histories of the second- and third-stage cases of mercurialism. Or, one may wish to find out whether or not there is some connection between the excretion of mercury in the urine and the presence of albumin in the urine. In each instance, by working from the listed data one may quickly assemble the records needed to answer the question under study.

7. Data listed in this form can be used to set up efficient systems of sampling. For example, if one wished to study the mercury content of blood samples in relation to the variables defined in table 1, and if the methods of analysis were known to be difficult and time-consuming, it might be desirable to find a means by which enough analyses could be obtained to establish reliable trends without overloading the analyst. Reference to the number of hatters classified in each of the subgroups of table 1 will show that 1 of the 12 subgroups contains as few as 10 men and 4 others contain about 80 men. To form such a table of average values for the mercury content of blood, one ought to have analyses on the blood of all of the 10 men, but one could draw a sample from the largest groups. Choice of an appropriate sampling procedure is necessarily governed by the nature of the data.

SUGGESTIONS FOR CODING DATA

The following suggestions for coding have been found to expedite the use of a printing tabulator for listing, for controlling the various functions of the tabulator, and for obtaining the values needed for means, standard deviations, and correlation coefficients by methods described elsewhere.

1. Always punch the case number in the card (*a*) to assist in verifying the accuracy of the punched data, (*b*) to be able to trace an anomalous or noteworthy record back to its source, and (*c*) to make it possible to put data for the same individual on two or more punch cards without interfering with intercorrelation of data punched on separate cards.

2. Always set aside fields of the card in which an X (the eleventh position in the column) will never be punched. If possible, leave a

few columns blank at the right end of the card. This makes it possible to punch in an X at a later time which will be a signal to the tabulating machine to control one of its various functions.

3. Insofar as possible, in other fields use the 11th (X) and 12th (V) positions sparingly. On many tabulators these positions do not have a separate symbol and they may be printed as a zero.

4. Always provide a place in the code for "no information available."

5. It is desirable to avoid double-punching. It is preferable to use a separate column for each item, even for findings that are recorded only as present or absent. Double-punching and combination codes are often used, but all too frequently the apparent advantage gained by saving space on the card is lost in the resulting waste of time in the tabulating room and in the increased likelihood of error. If duplicate cards are prepared, one of the two punches in a column may be lost. If two numerical code numbers are put in the same column, listing is made more complicated. It is more satisfactory to use two cards to carry the record of an individual in simple coding than to attempt to compress the records on one card by use of a complicated code.

6. Data entered on the original record forms in numbers (e. g., age, weight, concentration values, blood pressures) may be used for more than one purpose when they are transferred to punch cards, and a coding procedure that may facilitate one operation may interfere with another. For instance, if records of age are to be printed on a tabulator sheet to be available in studying the rest of the case record, it is desirable to have the record of a 67-year-old man printed with 67 in the age column. On the other hand, if tables showing the incidence of cancer or tuberculosis by 5-year age groups are to be built up it would be more convenient to designate his age group (65–69) by a single code number.

Consideration should be given to the possibility of entering numerical data in two ways—in the units of measurement and coded for convenient use of machine methods.

In the following discussion, the principles that apply to the coding of numerical data have been classified by the use to which they are put. They are illustrated, in part, by reference to the problems that arise in coding blood pressure values.

When *means* and *standard deviations* are to be calculated the first step in preparing a code is to know the range over which the values are distributed. This range should be subdivided into 20 to 30 *equal* class intervals, and 2 columns should be utilized. If the data are classified into as few as 10 or 12 class intervals, for instance, systematic errors enter into the calculation of average values and standard deviations. In the interests of accuracy, one should avoid, as far as

possible, defining the lowest class interval as "under 80" and the highest class interval as "over 280," for example.

When punched data are to be used to *control* the tabulation of data entered in other columns (the principle involved in many labor-saving machine methods described elsewhere), it is desirable to code in such a way that only one column will be needed for control. To illustrate, if the data of table 1 were to be assembled on a printing tabulator more efficiently than they can be assembled with a sorting machine, the tabulator might be wired so that whenever "08" or "06", for example, appeared in the columns for "years of mercury exposure," the *zero* in the tens place would be the signal to the tabulating machine to add certain items on that card into counters set aside for the records of persons employed less than 10 years. Further, if "12" or "18" appeared in the column for years of mercury exposure, the *one* in the tens place would be the signal for the tabulator to add certain items on that card into counters set aside for the records of persons employed 10 to 19 years. Finally, if "28", "34", or "42" appeared in the columns used for control, the *two*, *three*, or *four* in the tens place would be the signal for the tabulator to add certain items into a third set of counters reserved for men employed more than 20 years. One digit selector is used to discriminate the cards punched *zero* from the cards punched *one* and from the cards punched *two*, *three*, or *four*.

To continue with the same illustration, the code of atmospheric mercury exposure should be so arranged that the second of the two digit selectors could be used to classify the data with respect to intensity of exposure at the same time that the first digit selector is classifying them by duration of exposure. The atmospheric concentration code defined in figure 2 is not a satisfactory means of obtaining the intervals 0–0.7, 0.8–1.5, 1.6–2.3, and so on, because two digit selectors would be needed for that one function. If machine methods were to be applied on a large scale to data coded in this way, a supplementary code for intensity of exposure should be punched into one of the columns at the right end of the card, column 80, for instance, left blank for such a purpose. This supplementary code could be so defined that persons exposed to less than 0.7 milligrams Hg per 10 cubic meters of air would be coded zero in column 80; persons exposed to 0.8 to 1.5 milligrams Hg per 10 cubic meters of air would be coded one in column 80, and so on.

A discussion of problems that arise in coding blood pressure values exemplifies some of the principles just referred to and serves to introduce others. Three characteristics of these data should be mentioned. The systolic blood pressures of employed men and women examined by Public Health Service physicians in the course of field studies of industrial health hazards range from 80 to 280 millimeters Hg. Most

of the values fall within the range 100 to 150 millimeters Hg. Usually the manometer scale is read to the nearest *zero* or the nearest *five*. The obvious procedure would be to code the systolic pressure directly; when printed on a tabulator sheet, physicians would find blood pressure expressed in the units in which they measure and discuss this finding. However, the blood pressure is not known to three-place accuracy, and there may not be enough space on the card to set aside three columns for this one finding. An alternative is no more satisfactory, namely, dropping the last place and coding a pressure of 80 as "08" and a pressure of 280 as "28". There are two objections to this procedure: First, most of the systolic blood pressure values would be coded 10, 11, 12, 13, or 14, and trustworthy means and standard deviations could not be calculated. Second, if the standard methods for calculating means from grouped data are applied (assuming, for example, that the midpoint of the interval 120–130 lies at 125), the means are higher than if calculations had been made from ungrouped data. As Britten and Thompson (*2*) pointed out, it is necessary to assume that the midpoint falls at 3 instead of 5. This, of course, is a consequence of reading the scale to the nearest *zero* or the nearest *five*, a complication that may enter into any set of measurements. A third procedure, also found to be unsatisfactory in practice, would be to convert the three-figure readings into a two-column code by dropping the number in the hundreds place. This would result in coding 128 as "28" and it would also result in coding 228 as "28". It is generally more satisfactory, from the standpoint of accuracy, to set up a code in which the interval 78–82 will be designated as 01, 83–87 as 02, 88–92 as 03, and so on. If no record is available, this may be indicated by punching XX.

SUMMARY

This paper describes methods of tabulating data which have been developed during the course of analysis of sets of data in which the influence of relatively large numbers of variables had to be traced in comparatively small numbers of cases. These methods have been used when data were assembled by hand, without special equipment. When punch-card equipment (card punch, sorting machine, and printing tabulator) is available, its use will often save time and permit an investigator to put more hypotheses to test with his data than would be possible if he used slower methods.

In instances where it is hard to decide whether or not time will be saved by transferring data to punch cards it is suggested that the number of variables to be intercorrelated is more important than the number of case records under study.

Suggestions for coding are presented which have been found to facilitate the subsequent use of a printing tabulator for (1) listing classified data so that they can be read as individual case histories, (2) obtaining sums of quantitative data and counts of nonquantitative data, (3) controlling the operation of the tabulator so that the coding of one part of the punch card will determine the operation the machine will carry out on data punched in another part of the card, and (4) for using the tabulator to compute sums of products and sums of squares.

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DEATHS DURING WEEK ENDED DECEMBER 20, 1941

[From the Weekly Mortality Index, issued by the Bureau of the Census, Department of Commerce]

	Week ended Dec. 20, 1941	Corresponding week, 1940
Data from 88 large cities of the United States:		
Total deaths	8,728	8,697
Average for 3 prior years	8,589	
Total deaths, first 51 weeks of year	426,488	427,313
Deaths per 1,000 population, first 51 weeks of year, annual rate	11.7	11.7
Deaths under 1 year of age	525	518
Average for 3 prior years	485	
Deaths under 1 year of age, first 51 weeks of year	27,065	25,746
Data from industrial insurance companies:		
Policies in force	64,742,923	64,781,253
Number of death claims	12,503	11,617
Death claims per 1,000 policies in force, annual rate	10.1	9.4
Death claims per 1,000 policies, first 51 weeks of year, annual rate	9.3	9.6

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

REPORTS FROM STATES FOR WEEK ENDED DECEMBER 27, 1941

Summary

General health conditions, as indicated by the reports of the nine important communicable diseases presented in the following table, remain favorable.

There was a further slight decrease in the number of cases of influenza; 2,604 cases were reported as compared with 2,693 during the preceding week. During the corresponding week last year 45,475 cases were reported. Texas (1,254 cases), Virginia (260), South Carolina (203), Arizona (157), and Oklahoma (120) reported the largest numbers of cases.

The incidence of poliomyelitis continued to decline. Thirty-nine cases were reported during the current week, as compared with 55 during the preceding week. New York, with 6 cases, and Pennsylvania and Minnesota, with 4 cases each, were the only States reporting more than 2 cases.

Of 49 cases of typhus fever, 30 were reported in Georgia. Seven cases of tularemia were reported in Illinois, 2 in Michigan, and 1 case each in Maryland, North Carolina, and Mississippi.

The crude death rate in 88 large cities for the current week was 11.5 as compared with 12.2 for the preceding week. The cumulative rate to date this year is 11.6 as compared with 11.7 for the same period last year.

Telegraphic morbidity reports from State health officers for the week ended December 27, 1941, and comparison with corresponding week of 1940 and 5-year median

In these tables a zero indicates a definite report, while leaders imply that, although none were reported, cases may have occurred.

Division and State	Diphtheria			Influenza			Measles			Meningitis, meningococcus		
	Week ended—		Median 1936–40	Week ended—		Median 1936–40	Week ended—		Median 1936–40	Week ended—		Median 1936–40
	Dec. 27, 1941	Dec. 28, 1940		Dec. 27, 1941	Dec. 28, 1940		Dec. 27, 1941	Dec. 28, 1940		Dec. 27, 1941	Dec. 28, 1940	
NEW ENG.												
Maine	0	0	3	-------	24	6	192	35	35	0	0	0
New Hampshire	0	0	0	-------	-------	-------	6	0	2	2	0	0
Vermont	0	0	0	-------	-------	-------	4	44	24	0	0	0
Massachusetts	1	1	3	-------	-------	-------	118	223	191	3	1	1
Rhode Island	2	0	0	-------	-------	-------	26	1	1	0	0	0
Connecticut	0	1	1	1	1	4	76	9	50	2	1	1
MID. ATL.												
New York	11	20	26	[1] 10	[1] 32	[1] 17	344	1,098	319	5	2	5
New Jersey	12	9	15	17	6	16	38	405	119	3	0	0
Pennsylvania	15	13	25	-------	-------	-------	533	966	60	1	1	2
E. NO. CEN.												
Ohio	7	10	25	14	55	35	47	224	25	0	2	4
Indiana	10	12	18	37	229	35	25	32	8	0	0	0
Illinois	24	33	36	6	24	24	36	734	22	0	0	2
Michigan [3]	4	5	17	-------	6	3	38	795	172	2	0	1
Wisconsin	0	1	3	31	44	44	172	309	223	2	1	0
W. NO. CEN.												
Minnesota	2	0	1	-------	-------	-------	107	3	8	0	0	0
Iowa	2	0	5	1	201	10	75	114	56	0	1	0
Missouri	10	1	14	5	16	29	27	11	3	0	1	1
North Dakota	1	2	2	17	43	12	133	16	3	0	1	0
South Dakota	3	2	2	-------	-------	1	0	1	1	0	0	0
Nebraska	0	0	0	-------	-------	-------	4	10	3	0	0	0
Kansas	3	6	8	10	1,907	4	117	88	53	1	0	0
SO. ATL.												
Delaware	0	0	0	-------	-------	-------	0	4	2	0	0	0
Maryland [3]	9	2	6	5	7	14	133	9	11	1	2	2
Dist. of Col.	0	1	2	-------	6	5	0	5	5	1	0	0
Virginia	32	32	32	260	558	175	103	180	38	3	1	1
West Virginia	6	6	12	17	15	19	92	16	29	0	2	2
North Carolina [3]	14	13	35	1	6	14	212	136	136	0	1	1
South Carolina [3]	12	5	6	203	440	347	45	53	15	1	0	0
Georgia [3]	14	10	10	13	636	124	66	25	7	0	0	0
Florida	9	3	8	16	38	3	2	0	2	0	0	2
E. SO. CEN.												
Kentucky	4	5	13	1	1,089	22	32	135	17	0	3	4
Tennessee [3]	11	4	10	61	289	45	73	55	55	0	0	1
Alabama [3]	12	13	19	59	332	332	5	32	32	3	3	3
Mississippi	8	5	11	-------	-------	-------	-------	-------	-------	0	0	1
W. SO. CEN.												
Arkansas	11	7	15	98	4,260	192	26	304	44	0	0	0
Louisiana [3]	8	1	13	-------	6,101	10	3	2	2	2	1	1
Oklahoma	16	14	14	120	1,848	123	113	4	4	0	0	2
Texas [3]	51	40	40	1,254	7,307	444	296	46	67	2	3	2
MOUNTAIN												
Montana	0	2	1	6	388	35	41	3	3	0	0	0
Idaho	1	0	0	-------	18	5	4	2	25	0	0	0
Wyoming	0	0	0	10	548	-------	3	1	1	1	0	0
Colorado	5	1	6	69	805	41	59	70	22	0	0	0
New Mexico	0	1	1	-------	56	6	6	28	22	0	0	0
Arizona	3	2	2	157	1,735	102	62	80	4	0	0	0
Utah [3]	0	0	1	27	5,048	8	48	2	16	0	0	0
Nevada	0	-------	-------	-------	968	-------	0	-------	-------	0	-------	-------
PACIFIC												
Washington	1	6	3	1	1,686	-------	17	17	17	0	0	0
Oregon	3	3	1	17	1,877	40	84	13	15	0	0	0
California [4]	14	10	39	60	7,126	38	546	38	48	2	2	2
Total	351	302	568	2,604	45,475	2,107	4,189	6,378	4,781	37	29	43
52 weeks	16,922	15,715	27,892	597,990	309,669	189,352	868,643	276,032	302,242	2,023	1,667	2,824

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended December 27, 1941, and comparison with corresponding week of 1940 and 5-year median—Con.

Division and State	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever		
	Week ended—		Median, 1936–40	Week ended—		Median, 1936–40	Week ended—		Median, 1936–40	Week ended—		Median, 1936–40
	Dec. 27, 1941	Dec. 28, 1940		Dec. 27, 1941	Dec. 28, 1940		Dec. 27, 1941	Dec. 28, 1940		Dec. 27, 1941	Dec. 28, 1940	
NEW ENG.												
Maine	1	1	0	11	4	19	0	0	0	1	0	0
New Hampshire	0	0	0	9	2	4	0	0	0	1	0	0
Vermont	0	0	0	1	8	8	0	0	0	0	1	0
Massachusetts	0	0	0	196	144	144	0	0	0	3	0	1
Rhode Island	0	0	0	9	4	5	0	0	0	0	0	0
Connecticut	1	0	0	17	24	49	0	0	0	1	0	0
MID. ATL.												
New York	6	2	1	299	252	371	0	0	0	13	8	6
New Jersey	2	1	0	95	147	114	0	0	0	1	1	3
Pennsylvania	4	0	0	180	180	217	0	0	0	6	7	7
E. NO. CEN.												
Ohio	2	3	0	225	190	328	0	0	2	7	1	4
Indiana	0	3	0	122	125	128	1	2	5	0	2	1
Illinois	2	3	3	182	326	326	1	11	5	5	1	1
Michigan [3]	0	2	1	160	194	301	0	4	0	0	2	6
Wisconsin	0	5	0	112	124	170	0	13	7	0	0	0
W. NO. CEN.												
Minnesota	4	1	1	58	45	104	5	25	25	0	0	1
Iowa	0	2	0	45	70	102	0	1	12	1	1	1
Missouri	0	0	0	78	34	91	0	0	9	0	1	3
North Dakota	0	0	0	5	13	18	1	0	0	0	0	0
South Dakota	1	0	0	37	12	23	0	0	4	0	0	0
Nebraska	0	0	0	24	6	21	0	0	1	0	0	0
Kansas	1	1	0	62	65	148	1	0	0	0	0	1
SO. ATL.												
Delaware	0	0	0	26	3	8	0	0	0	0	0	0
Maryland [3]	0	0	0	53	35	35	0	0	0	3	4	4
Dist. of Col	0	0	0	13	16	12	0	0	0	1	0	1
Virginia	2	1	0	49	62	39	0	0	0	8	4	5
West Virginia	0	1	0	57	51	51	0	0	0	2	1	1
North Carolina [3]	0	0	0	26	50	44	0	0	0	0	3	3
South Carolina [3]	1	0	0	7	10	8	0	0	0	0	0	0
Georgia [3]	0	0	0	13	29	20	0	0	0	2	2	5
Florida	0	0	1	10	5	10	0	0	0	1	2	2
E. SO. CEN.												
Kentucky	2	0	1	48	53	58	0	0	0	2	4	2
Tennessee [3]	2	0	0	70	75	38	0	0	0	1	5	2
Alabama [3]	0	2	1	37	20	20	0	0	0	1	6	6
Mississippi	1	0	1	6	11	10	0	0	0	0	0	0
W. SO. CEN.												
Arkansas	0	0	1	6	8	17	1	0	5	0	0	2
Louisiana [3]	0	0	0	8	1	12	0	0	0	9	5	4
Oklahoma	0	1	1	25	15	36	1	1	3	1	1	2
Texas [3]	2	2	2	57	69	75	4	1	3	4	6	9
MOUNTAIN												
Montana	0	0	0	23	9	16	0	1	5	2	0	0
Idaho	0	0	0	8	8	13	0	1	3	0	0	0
Wyoming	0	1	0	4	0	6	0	0	0	0	0	0
Colorado	1	0	0	16	26	26	0	1	1	0	1	1
New Mexico	0	0	0	5	5	15	0	0	0	1	0	4
Arizona	0	0	0	9	7	8	1	0	0	0	2	2
Utah [3]	2	1	0	13	1	8	0	0	0	0	0	0
Nevada	0			0			0			0		
PACIFIC												
Washington	1	0	0	26	24	48	1	0	4	0	1	0
Oregon	0	1	0	6	6	27	0	0	5	0	0	0
California [3]	1	2	3	103	71	133	0	0	8	3	8	8
Total	39	36	27	2,651	2,639	3,552	17	61	152	80	80	106
52 weeks	9,056	9,769	7,288	127,505	155,064	186,532	1,368	2,462	9,574	8,513	9,585	14,230

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended December 27, 1941, and comparison with corresponding week of 1940—Con.

Division and State	Whooping cough	
	Week ended—	
	Dec. 27, 1941	Dec. 28, 1940
NEW ENG.		
Maine	19	23
New Hampshire	11	0
Vermont	17	6
Massachusetts	125	233
Rhode Island	26	5
Connecticut	38	35
MID. ATL.		
New York	392	328
New Jersey	146	85
Pennsylvania	139	373
E. NO. CEN.		
Ohio	161	253
Indiana	43	23
Illinois	177	120
Michigan [2]	163	292
Wisconsin	258	110
W. NO. CEN.		
Minnesota	30	38
Iowa	13	61
Missouri	19	7
North Dakota	2	18
South Dakota	1	2
Nebraska	2	13
Kansas	40	53
SO. ATL.		
Delaware	0	7
Maryland [2]	21	65
Dist. of Col	11	17
Virginia	36	113
West Virginia	10	35
North Carolina [3]	100	79
South Carolina [3]	11	39
Georgia [3]	1	16
Florida	11	1
E. SO. CEN.		
Kentucky	39	45
Tennessee [3]	32	24
Alabama [3]	21	21
Mississippi		
W. SO. CEN.		
Arkansas	10	15
Louisiana [3]	1	3
Oklahoma	3	12
Texas [3]	74	160
MOUNTAIN		
Montana	8	3
Idaho	1	11
Wyoming	5	1
Colorado	14	19
New Mexico	23	12
Arizona	51	14
Utah [2]	17	16
Nevada	0	
PACIFIC		
Washington	55	27
Oregon	6	6
California [3]	147	128
Total	2,530	2,967
2 weeks	208,460	170,911

[1] New York City only.
[2] Period ended earlier than Saturday.
[3] Typhus fever, week ended Dec. 27, 1941, 49 cases, as follows: North Carolina, 1; South Carolina, 4; Georgia, 30; Tennessee, 2; Alabama, 4; Louisiana, 2; Texas, 4; California, 2.

WEEKLY REPORTS FROM CITIES

City reports for week ended Dec. 13, 1941

This table lists the reports from 128 cities of more than 10,000 population distributed throughout the United States, and represents a cross section of the current urban incidence of the diseases included in the table.

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Maine:											
Portland	0	------	0	2	2	10	0	1	0	4	21
New Hampshire:											
Concord	0	------	0	0	0	1	0	0	0	0	5
Manchester	0	------	0	6	1	14	0	0	0	0	15
Nashua	0	------	0	3	0	4	0	0	0	9	4
Vermont:											
Burlington	0	------	0	0	0	0	0	0	0	0	10
Rutland	0	------	0	0	1	0	0	0	0	0	4
Massachusetts:											
Boston	2	------	1	14	10	59	0	8	1	50	183
Fall River	3	------	0	1	1	39	0	1	0	3	37
Worcester	0	------	0	3	4	23	0	3	0	17	47
Rhode Island:											
Pawtucket	0	------	0	11	0	3	0	0	0	4	12
Providence	4	------	0	6	1	5	0	0	0	26	49
Connecticut:											
Bridgeport	0	1	1	0	1	2	0	0	0	1	35
Hartford	0	------	0	2	4	0	0	1	0	1	50
New Haven	0	------	0	17	0	0	0	0	0	4	34
New York:											
Buffalo	0	------	0	3	6	13	0	2	0	0	123
New York	12	8	1	14	58	126	0	65	2	307	1,354
Rochester	0	------	0	1	0	8	0	2	0	8	67
Syracuse	0	------	0	1	4	2	0	0	0	30	65
New Jersey:											
Camden	0	------	0	0	0	2	0	0	1	14	34
Newark	0	10	0	4	3	16	0	5	0	36	91
Trenton	0	------	0	0	2	12	0	0	0	5	34
Pennsylvania:											
Philadelphia	0	4	2	5	22	66	0	18	0	33	482
Pittsburgh	1	3	1	2	13	9	0	7	0	13	178
Reading	0	------	1	1	0	0	0	1	0	1	27
Scranton	0	------	--------	7	-------	2	0	-------	0	0	--------
Ohio:											
Cincinnati	0	------	0	0	0	18	0	13	0	13	121
Cleveland	2	16	0	0	17	48	0	9	0	31	205
Columbus	0	1	1	1	4	10	0	0	1	6	79
Toledo	0	------	0	1	3	1	0	2	0	13	82
Indiana:											
Anderson	1	------	0	0	1	0	0	0	0	0	10
Fort Wayne	0	------	0	1	2	2	0	0	2	0	28
Indianapolis	1	------	0	4	10	20	0	1	0	1	102
Muncie	0	------	0	0	0	0	0	0	0	0	9
South Bend	0	------	0	0	0	3	0	0	0	0	11
Terre Haute	0	------	0	0	3	1	0	0	0	0	15
Illinois:											
Chicago	24	5	0	10	22	78	0	28	2	133	662
Elgin	0	------	0	0	2	1	0	0	0	6	9
Moline	0	------	0	0	0	1	0	0	0	2	12
Springfield	0	------	0	0	0	4	0	0	0	0	17
Michigan:											
Detroit	4	------	0	16	6	61	0	6	0	68	253
Flint	0	------	0	0	1	0	0	2	0	0	15
Grand Rapids	0	------	0	3	0	2	0	0	0	10	26
Wisconsin:											
Kenosha	0	------	0	0	0	2	0	0	0	0	8
Madison	0	------	0	1	0	2	0	0	0	2	5
Milwaukee	0	------	0	6	0	26	0	2	0	122	103
Racine	0	------	0	3	0	2	0	0	0	24	7
Superior	0	------	0	0	1	0	0	1	0	0	7
Minnesota:											
Duluth	0	------	0	2	0	2	0	0	0	1	27
Minneapolis	1	------	0	1	3	23	0	3	0	6	99
St. Paul	0	------	0	28	2	4	0	2	0	11	73
Iowa:											
Cedar Rapids	0	------	--------	2	-------	0	0	-------	0	0	--------
Davenport	0	------	--------	1	-------	1	0	-------	0	0	--------
Des Moines	0	------	0	3	2	5	0	1	0	3	27
Sioux City	0	------	--------	1	-------	0	0	-------	0	0	--------
Waterloo	0	------	--------	0	-------	1	0	-------	0	1	--------

City reports for week ended Dec. 13, 1941—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Missouri:											
Kansas City	0	------	0	0	7	11	0	4	0	0	110
St. Joseph	1	------	0	0	1	3	0	0	0	0	13
St. Louis	5	------	0	5	10	21	0	6	0	16	207
North Dakota:											
Grand Forks	0	------	------	0	------	1	0	------	0	0	------
Minot	0	------	------	52	------	0	0	------	0	1	12
South Dakota:											
Aberdeen	0	------	------	0	------	0	0	------	0	0	------
Sioux Falls	2	------	------	0	------	2	0	------	0	0	8
Nebraska:											
Omaha	0	------	0	2	6	4	0	0	0	0	49
Kansas:											
Lawrence	0	------	------	0	------	0	0	------	0	0	4
Topeka	0	------	0	0	0	3	0	0	0	3	7
Wichita	0	1	0	4	3	4	0	0	0	1	20
Delaware:											
Wilmington	1	------	0	8	2	8	0	2	0	0	30
Maryland:											
Baltimore	3	5	2	98	15	17	0	7	3	22	223
Cumberland	0	------	0	2	0	0	0	0	3	0	11
Frederick	0	------	0	0	0	0	0	0	0	0	5
District of Columbia:											
Washington	0	1	1	2	9	9	0	8	2	10	174
Virginia:											
Lynchburg	1	------	0	0	0	2	0	0	0	0	8
Norfolk	2	------	0	0	1	3	0	2	0	1	18
Richmond	3	------	0	0	3	2	0	3	0	0	51
Roanoke	0	------	0	0	0	1	0	0	0	0	22
West Virginia:											
Charleston	0	------	0	0	0	1	0	1	0	2	20
Huntington	2	------	------	0	------	1	0	------	0	0	------
Wheeling	0	------	0	24	0	5	0	0	0	1	16
North Carolina:											
Gastonia	0	------	------	0	------	1	0	------	0	1	------
Wilmington	0	------	0	47	0	0	0	0	0	1	12
Winston-Salem	3	------	0	51	0	1	0	4	0	0	20
South Carolina:											
Charleston	0	34	0	1	1	1	0	0	1	0	24
Florence	0	------	0	0	1	0	0	0	0	0	13
Greenville	0	------	0	0	0	0	0	0	0	0	8
Georgia:											
Atlanta	2	------	0	1	4	6	0	1	0	0	71
Brunswick	0	------	0	0	0	0	0	1	0	0	3
Savannah	1	1	0	16	2	1	0	0	0	0	32
Florida:											
Miami	0	2	0	0	0	0	0	2	1	0	39
St. Petersburg	0	------	0	0	1	0	0	0	0	5	20
Tampa	1	1	1	0	0	0	0	0	0	0	34
Kentucky:											
Ashland	0	------	0	3	1	3	0	0	0	5	7
Covington	0	------	0	0	1	3	0	4	0	0	18
Lexington	0	------	0	0	0	1	0	2	0	2	12
Tennessee:											
Knoxville	1	------	0	2	3	3	0	1	0	0	33
Memphis	1	4	2	0	5	1	0	0	1	8	57
Nashville	0	------	3	1	2	2	0	1	0	2	56
Alabama:											
Birmingham	0	8	1	0	5	7	0	3	0	0	74
Mobile	2	------	1	6	2	0	0	1	0	0	30
Montgomery	0	------	------	0	------	0	0	------	0	0	------
Arkansas:											
Fort Smith	0	------	------	3	------	0	0	------	0	0	------
Little Rock	0	15	0	0	1	2	------	0	0	1	19
Louisiana:											
Lake Charles	0	------	0	0	1	0	0	0	0	0	10
New Orleans	1	2	0	1	9	5	0	8	0	0	143
Oklahoma:											
Oklahoma City	1	2	0	0	0	4	0	1	0	0	39
Tulsa	6	------	0	195	1	3	0	0	0	0	13
Texas:											
Dallas	7	------	0	38	2	3	0	3	0	1	69
Fort Worth	1	------	0	1	2	2	0	2	0	7	41
Galveston	0	------	0	0	1	0	0	1	0	0	20
Houston	2	------	0	1	9	5	0	5	0	0	95
San Antonio	2	19	1	1	8	2	0	7	0	1	72

City reports for week ended Dec. 13, 1941—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Montana:											
Billings	0	------	0	1	0	0	0	0	0	0	8
Great Falls	0	------	0	17	1	1	0	1	0	10	8
Helena	0	------	0	1	0	0	0	0	0	11	1
Missoula	0	------	0	1	1	1	0	0	0	0	7
Idaho:											
Boise	0	------	0	6	0	1	0	0	0	0	6
Colorado:											
Denver	10	38	0	39	6	4	0	1	0	20	82
Pueblo	1	------	0	143	2	2	0	0	0	1	9
New Mexico:											
Albuquerque	0	------	0	0	0	0	0	0	0	3	9
Arizona:											
Phoenix	0	35	--------	7	--------	2	0	--------	0	9	--------
Utah:											
Salt Lake City	0	------	0	1	1	3	0	1	0	3	46
Washington:											
Seattle	0	------	4	0	2	0	0	3	0	21	121
Spokane	0	4	1	0	1	7	0	1	0	6	28
Tacoma	0	------	0	1	0	5	0	0	0	2	34
Oregon:											
Portland	2	5	2	2	4	0	0	1	0	5	105
California:											
Los Angeles	8	24	0	22	11	30	0	23	2	22	442
Sacramento	0	------	0	13	7	0	0	1	0	3	44
San Francisco	0	7	0	5	8	3	0	14	0	3	200

State and city	Meningitis, meningococcus		Poliomyelitis cases	State and city	Meningitis, meningococcus		Poliomyelitis cases
	Cases	Deaths			Cases	Deaths	
New Hampshire:				Indiana:			
Manchester	0	0	1	Muncie	0	0	1
Massachusetts:				Illinois:			
Boston	1	0	1	Chicago	3	1	2
Worcester	1	0	0	Kansas:			
New York:				Topeka	1	0	0
New York	1	1	3	Maryland:			
Syracuse	1	0	0	Baltimore	2	1	0
New Jersey:				Virginia:			
Trenton	1	0	1	Roanoke	1	0	0
Pennsylvania:				Georgia:			
Philadelphia	1	0	1	Atlanta	1	0	0
Scranton	1	0	0	Alabama:			
Ohio:				Birmingham	0	0	1
Cincinnati	1	0	0	California:			
Cleveland	1	0	0	Los Angeles	0	0	1

Encephalitis, epidemic or lethargic.—Cases: New York, 2; Philadelphia, 1; Milwaukee, 1. Deaths: Minneapolis, 1.

Pellagra.—Cases: St. Louis, 1; Savannah 1; Birmingham, 2; New Orleans, 1.

Typhus fever.—Cases: New York, 1; Philadelphia, 1; Atlanta, 2; Savannah, 5; Tampa, 1; Birmingham, 2; Montgomery, 7; Lake Charles, 1; New Orleans, 1. Deaths: Tampa, 1.

Rates (annual basis) per 100,000 population for a group of 85 selected cities (population, 1940, 33,591,005)

Period	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases
		Cases	Deaths							
Week ended Dec. 13, 1941	18.47	32.91	3.88	109.90	54.17	137.07	0.00	45.17	3.26	178.51
Average for week, 1936–40	21.56	141.19	8.50	198.33	92.08	163.38	2.20	51.47	3.78	168.74

FOREIGN REPORTS

CANADA

Provinces—Communicable diseases—Week ended November 29, 1941.—During the week ended November 29, 1941, cases of certain communicable diseases were reported by the Department of Pensions and National Health of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Cerebrospinal meningitis		6	1	1	8	1		1		18
Chickenpox		20	3	304	336	79	78	41	192	1,053
Diphtheria		15	1	24		10	5		1	56
Dysentery				19						19
Influenza		9			4	4			20	37
Lethargic encephalitis							[1]1			[1]1
Measles		5		707	128	17	29	1	9	896
Mumps				531	196	34	45	6	128	940
Pneumonia		4			8	2		1	6	21
Poliomyelitis		1	7		1					9
Scarlet fever	3	14	7	134	293	16	18	28	27	540
Trachoma						1				1
Tuberculosis	5	16	10	74	54	3	1			163
Typhoid and paratyphoid fever		1		5	2					8
Whooping cough		1	2	215	116	10	4	1	46	395

[1] Encephalomyelitis.

MALTA

Notifiable diseases—September 1941.—During the month of September 1941, certain notifiable diseases were reported in Malta, including the island of Gozo, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Cancer		7	Puerperal fever	6	
Cerebrospinal meningitis	2		Scarlet fever	1	
Chickenpox	3		Tetanus		4
Diphtheria	23	2	Trachoma	21	
Erysipelas	7		Tuberculosis (pulmonary)	29	20
Influenza	12		Typhoid fever	62	6
Malaria	2		Undulant fever	78	5
Measles	2		Whooping cough	59	2
Pneumonia	41	10			

REPORTS OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER RECEIVED DURING THE CURRENT WEEK

NOTE.—Except in cases of unusual prevalence, only those places are included which had not previously reported any of the above-named diseases, except yellow fever, during the current year. All reports of yellow fever are published currently.

A cumulative table showing the reported prevalence of these diseases for the year to date is published in the PUBLIC HEALTH REPORTS for the last Friday of each month.

Plague

Argentina.—According to a report dated December 18, 1941, 3 cases of bubonic plague, including 1 suspected case, have occurred in the town of Loberia about 300 miles south of Buenos Aires, Argentina. The report also states that some cases of plague have appeared in Guardia Vieja, Cordoba Province, Argentina.

Yellow Fever

Belgian Congo—Aba.—On December 11, 1941, 1 suspected case of yellow fever was reported in Aba, Belgian Congo.

COURT DECISIONS ON PUBLIC HEALTH

Oleomargarine law construed.—(Tennessee Supreme Court; *Jacobs Packing Co. et al.* v. *Flanery*, 151 S.W.2d 1073; decided June 14, 1941.) Section 2 of a Tennessee statute relating to oleomargarine provided that, for the purpose of the act, certain enumerated products should be known and designated as oleomargarine and further provided that the section should apply to all ingredients essential to and used in the manufacture, mixing, or compounding of oleomargarine. It was also stated that nothing in the section should be construed to mean that shortening should come under the act unless shortening or other similar compound of fats and/or oils was sold with or there was given away with shortening, etc., any article which when mixed with such shortening, etc., made oleomargarine as defined in the act.

A company sold two packaged products labeled as vegetable shortening and vitamin fortifier. The former weighed 12 and the latter 4 ounces and when mixed by the purchaser a pound of yellow oleomargarine was produced. The Tennessee Supreme Court was of the opinion that the statutory language mentioned was intended to and did embrace these two products and that, in view of the construction placed on section 2, it was manifest that the complainants were liable for the license fee stated in section 5, which section required a license of every person desiring to manufacture or sell oleomargarine as defined in section 2.

Section 10 of the statute levied a tax of 10 cents per pound "on all oleomargarine sold in the State as defined in section 2 of this act which

is yellow in color, irrespective of the types or kinds of fats or oil ingredients contained by such yellow oleomargarine, any other provision of this act to the contrary notwithstanding." The supreme court held that under this section the two products above mentioned were subject to the tax of 10 cents per pound and in this connection said: "* * * It will be recalled that section 2, as amended, specifically embraces any two ingredients which when mixed produce oleomargarine. This is exactly what occurs when the two Jelke products are mixed; so that these two products, under the provisions of section 2, are oleomargarine even before they are mixed. And, being oleomargarine, they are of a yellow color, because that color only can be produced by mixing them. It follows that these products are subject to the tax of 10 cents per pound because, by the amendment, they are made yellow oleomargarine. * * *"

The court further held that those engaged in selling the two Jelke compounds were subject to the regulations imposed by sections 3 and 3–A of the statute and stated that the requirements as to advertising, vitamin content, inspection, etc., were reasonable regulations under the police power of the State.

Tax levy for county tuberculosis hospital.—(Illinois Supreme Court; *People ex rel. Smith, County Collector* v. *Wabash Ry. Co. et al.*, 35 N.E.2d 325; decided June 17, 1941.) In a proceeding in which a county collector applied for judgment and sale of real estate for delinquent taxes, one of the objections was to a levy for the county tuberculosis hospital, which tax was in addition to the levy of 25 cents per $100 assessed valuation for general corporate purposes of the county. The basis of the objection was that the county board was without authority to make the said levy in addition to the 25 cents limitation without a vote of the people for such purpose. It appeared that when the hospital was established a number of years before the proposition submitted to the electors of the county under the tuberculosis hospital statute had been for or against the levy of a tax for a hospital. The resolution of the county supervisors relative to the matter said nothing about an addition to the county general corporate purpose tax rate. The holding of the Illinois Supreme Court was that, when a vote was taken under section 2 of the tuberculosis hospital act and the tax mentioned in section 1 of the act was levied, the tax was one for a general corporate purpose and had to be included in the 25 cent rate.

Pneumonia held compensable under workmen's compensation act.—(New Mexico Supreme Court; *Stevenson* v. *Lee Moor Contracting Co. et al.*, 115 P. 2d 342; decided July 7, 1941.) In a proceeding under the New Mexico Workmen's Compensation Act compensation for pneumonia was sought by a truck driver employed by a road building contractor. The employee became ill after operating for a day one of the

heavy trucks belonging to his employer. The findings of the trial court, very briefly stated, were that the employee was furnished by his employer with an old, defective truck that emitted excessive gases and fumes (more than any other truck on the job), that the employee breathed such gases and fumes while operating the truck, and that the effect of breathing such gases and fumes was to precipitate "the activity of pneumococci, which resulted in pneumonia." The statute provided for compensation where, among other things, the injury was proximately caused by accident. The supreme court said that the only question was whether the trial court erred in holding, under its findings of fact, that the employee's injury was not "proximately caused by accident" as the phrase was used in the law.

In the majority of cases, said the appellate court, the accident and injury are separate, such as injuries resulting from the breaking of machinery, explosions, etc., but there are many cases in which the accident and injury constitute one happening, such as hernia, blood clots, and hemorrhages, resulting from exertion or strain, and sprained ankle, overheating, sunstroke, breathing dust, freezing, etc. The court's holding was that injury by accident meant nothing more than an accidental injury or an accident as the word was ordinarily used. It denoted an unlooked-for mishap or an untoward event which was not expected or designed.

In discussing the question whether the injury was accidental the court stated that it was not necessary that the injury should result momentarily to be accidental but that it could be "the result of hours, even a day, or longer, of breathing or inhaling gases, depending upon the facts of the case." "If the appellant had been struck in the chest with a stone, the effect of which had been to lower his resistance so that pneumonia resulted, no one would question but that it was an accident. He was struck in the respiratory organs by the finer substance of fumes and gases, with the same effect. We see no material difference in the two causes." As it appeared from the findings of the trial court that the employee was subjected to unusual and extraordinary conditions and hazards, not usual to his employment and to which no other of the workmen on the job was subjected, and that such unusual and extraordinary conditions and hazards were the proximate cause of the attack of pneumonia, the court concluded that the employee's "injury, including that resulting from pneumonia, was an injury by accident" and, therefore, compensable.

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